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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

044182-0308512

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on November 10, 2005

Signature

Typed or printed name Sachiko Y. Snedden

Application Number

10/788,670

Filed

February 27, 2004

First Named Inventor

John T. Strom

Art Unit

2829

Examiner

Nguyen, Jimmy

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

applicant/inventor.

assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

attorney or agent of record. 55636

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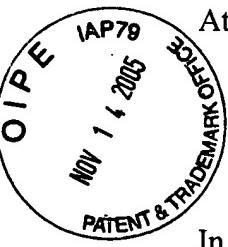
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*Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Attorney Docket: 044182-0308512

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: STROM
Application No.: 10/788,670

Filed: February 27, 2004

Confirmation No. : 3585
Group Art Unit.: 2829

Examiner: NGUYEN, Jimmy

Title: METHOD OF APPLYING THE ANALYSIS OF SCRUB MARK MORPHOLOGY AND LOCATION TO THE EVALUATION AND CORRECTION OF SEMICONDUCTOR TESTING, ANALYSIS AND MANUFACTURE

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pre-Appeal Brief Request for Review

This brief is submitted concurrently with a Notice of Appeal in the above-listed Application. The Notice of Appeal is filed responsive to the Office Action mailed on June 10th, 2005. An Advisory Action was mailed August 30th, 2005 in response to an After Final amendment filed by Applicant on August 12, 2005. A petition for a two month extension of time is filed herewith covering the period September 10th, 2005 until present.

REMARKS

Only claim 1 is pending in the Application. In the Final Office Action (“FOA”), the Examiner rejected claim 1 under 35 U.S.C. 102(b) as being allegedly anticipated by U.S. Patent No. 5,657,394 to Schwartz et al. (“Schwartz”).

Applicant respectfully submits that the Schwartz reference does not teach every aspect of the claimed invention either explicitly or impliedly and the rejection is therefore improper (*see* MPEP §706.02). Schwartz does not teach obtaining images of first scrub marks made by probe card pins on a check plate and images of second scrub marks made by said probe card pins on bonding pads as required in claim 1. Furthermore, Schwartz does not teach a scrub mark analyzer, a probe card analyzer and a data processor as recited in claim 1.

Schwartz Does Not Teach Obtaining Images Of First And Second Scrub Marks

Claim 1 of the present Application requires, *inter alia*, a workstation comprising an imaging apparatus configured and operative to obtain images of first scrub marks made by probe card pins on a check plate in a probe card analyzer and images of second scrub marks made by said probe card pins on bonding pads in said scrub mark analyzer. The Examiner cited video system 146 of Fig. 4 in alleging that Schwartz teaches the recited imaging apparatus (FOA at page 3). The Examiner’s allegation is factually incorrect.

In defending the allegation, the Examiner states that “[a] probe card inspection system as recited in claim 1 of Schwartsz indicated that the scrub mark pattern data will be obtained and analyzing throughout the digital image from the computer” (FOA, page 2, paragraph 1). This defense misstates the content of both claim 1 of Schwartz and claim 1 of the present Application. Neither “scrub” nor “mark” appears in Claim 1 of Schwartz. Claim 1 of Schwartz explicitly recites a system for “inspecting probes in a probe array” that provides “a digital image of the tip of each probe” and includes “a computer means with software means to determine and analyze the position of each probe within the digital image.” Neither the claims nor the Specification of Schwartz provides any explicit teaching of obtaining images of first or second scrub marks as required in the presently claimed invention.

Schwartz does not impliedly teach the recited imaging of first and second scrub marks. Schwartz teaches only capturing images of probe tips. Specifically, Schwartz teaches a video system 146 that captures images of probe tips through a sapphire window 122 (see Fig. 4 Schwartz and col. 13, line 48 – col. 14, line 3). Schwartz teaches the use of a computer “to

determine the equivalent of a scrub mark 173 which would be made by the probe tip 90 on the relatively soft metal..." (col. 15, lines 9-19, emphasis added). Thus, Schwartz explicitly teaches that images of actual scrub marks are not obtained from the surface of sapphire window 122 and it is unreasonable to assert that Schwartz impliedly teaches the opposite of the explicit teaching.

Where Schwartz mentions actual scrub marks, it teaches observation by a user of the actual scrub marks rather than the obtaining of images of the actual scrub marks. Consider the following passage:

The chuck 100 is also equipped with vacuum port grooves 150 to hold down a wafer 10 on the chuck 100. This feature may be used to confirm the results of any testing and adjustments by allowing the user to contact the probe tips 90 to the bonding pads 40 and observe the scrub marks formed in the relatively soft pad metallization for proper X,Y positioning and length of the scrub mark.

(col. 12, lines 56-63). Thus, Schwartz merely allows a user to observe scrub marks to confirm results of analysis. This passage does not teach obtaining images of scrub marks and can only be read as teaching post-analysis confirmation of results. It is also apparent from the passage that Schwartz describes a configuration that precludes imaging of actual scrub marks. In mounting a wafer between the probe tips and the sapphire window, it will be appreciated that Schwartz's video system 146 would be unable to capture images of the scrub marks through the opaque wafer and opaque metallization on the wafer. The Schwartz video system would be limited to imaging the reverse side of the wafer. Thus, the teachings of Schwartz cannot reasonably be said to provide even implicit support for the Examiner's rejection.

Applicant also notes that Schwartz does not teach the required check plate on which first scrub marks are made by probe card pins and the Office Action makes no attempt to identify any relevant teaching. Even Schwartz's window surface 122 cannot be construed as the check plate because "window surface 122 is constructed of a hard, transparent material such as sapphire which will not be scratched or damaged by the probe tips" (col. 9, lines 54-57). Consequently, the Schwartz window surface 122 is incapable of receiving scrub marks.

Therefore, the Examiner's rejection of claim 1 is based on clear error of fact for at least the reason that Schwartz does not explicitly or impliedly teach an imaging apparatus configured and operative to obtain images of first scrub marks made by probe card pins on a check plate in said probe card analyzer and images of second scrub marks made by said probe card pins on bonding pads in said scrub mark analyzer. Applicant respectfully submits that the claim rejection is improper because of deficiency in the *prima facie* case in support of the rejection.

Schwartz Does Not Teach A Probe Card Analyzer And A Scrub Mark Analyzer

In addition to a probe card analyzer and a scrub mark analyzer, claim 1 requires a data processor coupled to an imaging apparatus and configured and operative to obtain scrub mark data associated with first scrub marks – made on a check plate in said probe card analyzer – and scrub pattern data associated with second scrub marks – made on bonding pads in said scrub mark analyzer – and to analyze said scrub mark data and said scrub pattern data; wherein said data processor allows prediction of the behavior of a probe pin on a semiconductor die metallization pad. Schwartz does not explicitly or impliedly teach the probe card analyzer and scrub card analyzer.

As discussed above, Schwartz does not explicitly or impliedly teach obtaining images of scrub marks. Nor is there explicit teaching of a check plate (see above), a probe card analyzer for making first scrub marks on a check plate or a scrub mark analyzer for making scrub marks on bonding pads. Nevertheless, the Examiner suggests that Schwartz's claimed system 99, including computer 200, teaches the required probe card analyzer and, further, that computer 200 also teaches the required data processor and the required scrub mark analyzer (FOA, page 3 and *see Fig. 8*). Specifically, the Examiner states in the Advisory Action mailed August 30, 2005 that: “[t]he element 200 of the 394's patent is uniformly identified as a computer wherein this computer can calculate, analy, [sic] display etc... [sic] a specific task within the system, therefore the computer is perfectly tool to analy [sic] the scrub mark.” This argument notably fails to address Schwartz's lack of teachings directed to a scrub mark analyzer that makes scrub marks on bonding pads and the absence of teaching of a check plate on which scrub marks are made. Further, and as shown above, Schwartz does not teach the analysis of actual scrub marks by a computer and, consequently, it is irrelevant that Schwartz's computer 200 would be capable of performing such untaught functions. Applicant respectfully submits that such speculative attribution of functionality to computer 200 is improper in the absence of factual support in Schwartz.

Applicant respectfully submits that the Examiner has failed to make a *prima facie* case in support of the rejection for at least the reason that Schwartz does not explicitly or impliedly teach scrub marks and the making of scrub marks and consequently cannot be said to anticipate a probe card analyzer that makes first scrub marks on a check plate and a scrub mark analyzer that makes scrub marks on bonding pads as required by claim 1.

CONCLUSION

For at least the reasons presented above, it is respectfully submitted that it is clear that the Examiner erred in rejecting claim 1 because the reference does not teach every aspect of the claimed invention either explicitly or impliedly. Therefore, the rejections are improper and should be withdrawn. Further, the claims are believed to be in form for allowance, and such action is hereby solicited.

Please charge any fees associated with the submission of this paper to Deposit Account Number 502212. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Date: November 10, 2005

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Date: November 10, 2005

SACHIKO Y. SNEDDEN
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* Only the date of filing (§ 1.6) will be the date used in a patent term adjustment calculation, although the date on any certificate of mailing or transmission under § 1.8 continues to be taken into account in determining timeliness. See § 1.703(j). Consider "Express Mail Post Office to Addressee" (§ 1.10) or facsimile transmission (§ 1.6(d)) for the reply to be accorded the earliest possible filing date for patent term adjustment calculations.